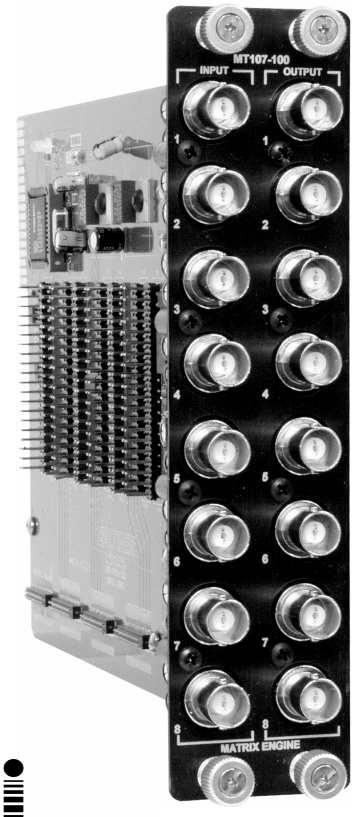


Multi Tasker™

MANUAL PART NUMBER: 400-0351-002

MT107-100

64X64 MATRIX SWITCHER

FOR MULTI-TASKER™

USER'S GUIDE

ALTINEX

SIGNAL MANAGEMENT SOLUTIONS

Tel: 714-990-2300 • Toll-Free: 1-800-ALTINEX • FAX: 714-990-3303 • E-mail: solutions@altinex.com • Web: www.altinex.com

TABLE OF CONTENTS

Page

PRECAUTIONS / SAFETY WARNINGS 2
GENERAL 2
INSTALLATION 2
CLEANING 2
FCC / CE NOTICE 2
ABOUT YOUR MT107-100 3
TECHNICAL SPECIFICATIONS 3
PRODUCT DESCRIPTION 4
APPLICATION DIAGRAM 5
DIAGRAM 1: TYPICAL CONFIGURATION 5
DIAGRAM 2: OUTPUT CARD SWITCHES 6
DIAGRAM 3: ADD ON CARD SWITCHES 7
DIAGRAM 4: INTERNAL VIEW 8
INSTALLING YOUR MULTI-TASKER™ 9
OPERATION 9
RS-232 CONTROL 9
DESCRIPTION OF COMMANDS 9
SUMMARY OF COMMANDS 17
TROUBLESHOOTING GUIDE 18
LED IS NOT LIT 18
LED IS BLINKING RED 18
NO DISPLAY 18
ALTINEX POLICY 19
LIMITED WARRANTY/RETURN POLICY 19
CONTACT INFORMATION 19

ALTINEX
SIGNAL MANAGEMENT SOLUTIONS
Tel: 714-990-2300 • Toll-Free: 1-800-ALTINEX • FAX: 714-990-3303 • E-mail: solutions@altinex.com • Web: www.altinex.com

PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **MT107-100**. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **MT107-100** and to prevent fire and shock hazard. Please read them carefully and heed all warnings.

1.1 GENERAL

- Qualified ALTINEX service personnel, or their authorized representatives must perform all service.

1.2 INSTALLATION

- To prevent fire or shock, do not expose this unit to rain or moisture. Do not place the **MT107-100** in direct sunlight, near heaters or heat radiating appliances, or near any liquid. Exposure to direct sunlight, smoke, or steam can harm internal components.
- Handle the **MT107-100** carefully. Dropping or jarring can damage the card.
- Do not pull the cables that are attached to the **MT107-100.**
- Insert the card carefully into the slots of the Multi-Tasker™ without bending any edges.

1.3 CLEANING

- Clean only the connector area with a dry cloth. Never use strong detergents or solvents, such as alcohol or thinner. Do not use a wet cloth or water to clean the card. Do not clean or touch any component or PCB.

1.4 FCC / CE NOTICE

- This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
- Any changes or modifications to the unit not expressly approved by ALTINEX, Inc. could void the user's authority to operate the equipment.

ABOUT YOUR MT107-100 2

MT107–100

64 X 64 Matrix Engine 300MHz

The **MT107-100** is a 64x64 Matrix Engine used for connecting audio and video signals. The Matrix Engine has a built-in 8 video inputs and 8 video outputs. Additional inputs and outputs can be added using Input and Output video card, which are mounted to the engine with the specially provided high bandwidth video cables. Input and Output connector cards are available for Video and/or Audio inputs and outputs.

Video Input signals are buffered to the matrix system through individual Ground Loop Isolation Amplifiers. The video amplifier can be used for either video or sync signals.

All control of the Matrix Engine is maintained through the MultiTasker enclosure.

A video signal detection circuit is present on all Inputs and Outputs in order to make troubleshooting easier.

The VIS (Vertical Interval Switching) is a standard feature on the **MT107-100** and can be turned ON or OFF from RS-232 port.

The Matrix Engine could be easily configured to the customer requirements by selecting appropriate number of switching elements. The proper selection of configuration can be achieved using MTSetup. The switching elements within the Matrix Switcher are available in steps of 16. This is possible through the modular design of the Matrix Engine with switching elements blocks of 16x16.

The video output option default configuration is for analog video or sync. A small slide switch is provided for TTL Sync option.

TECHNICAL SPECIFICATIONS 3

FEATURES/ DESCRIPTION	MT107-100
GENERAL	
Inputs	8
Input Connectors	8 BNC Female
Outputs	
Output Connector	8 BNC Female
Compatibility	
Signal types	RGBHV,RGBS,RGsB, Composite Video, Sync
Signal resolution	VGA through UXGA

Table 1. **MT107-100** General

MECHANICAL	MT107-100
Enclosure Slots Required Base Configuration	2 Slots
Enclosure Slots Required Add On Cards	1 Slot per Card
Weight	1.1 lb (0.5 kg)
Connector Panel	Black Anodized
T° Operating	10°C-50°C
T° Maximum	75°C
Humidity	90% non-condensing
MTBF (calc.)	50,000 hrs

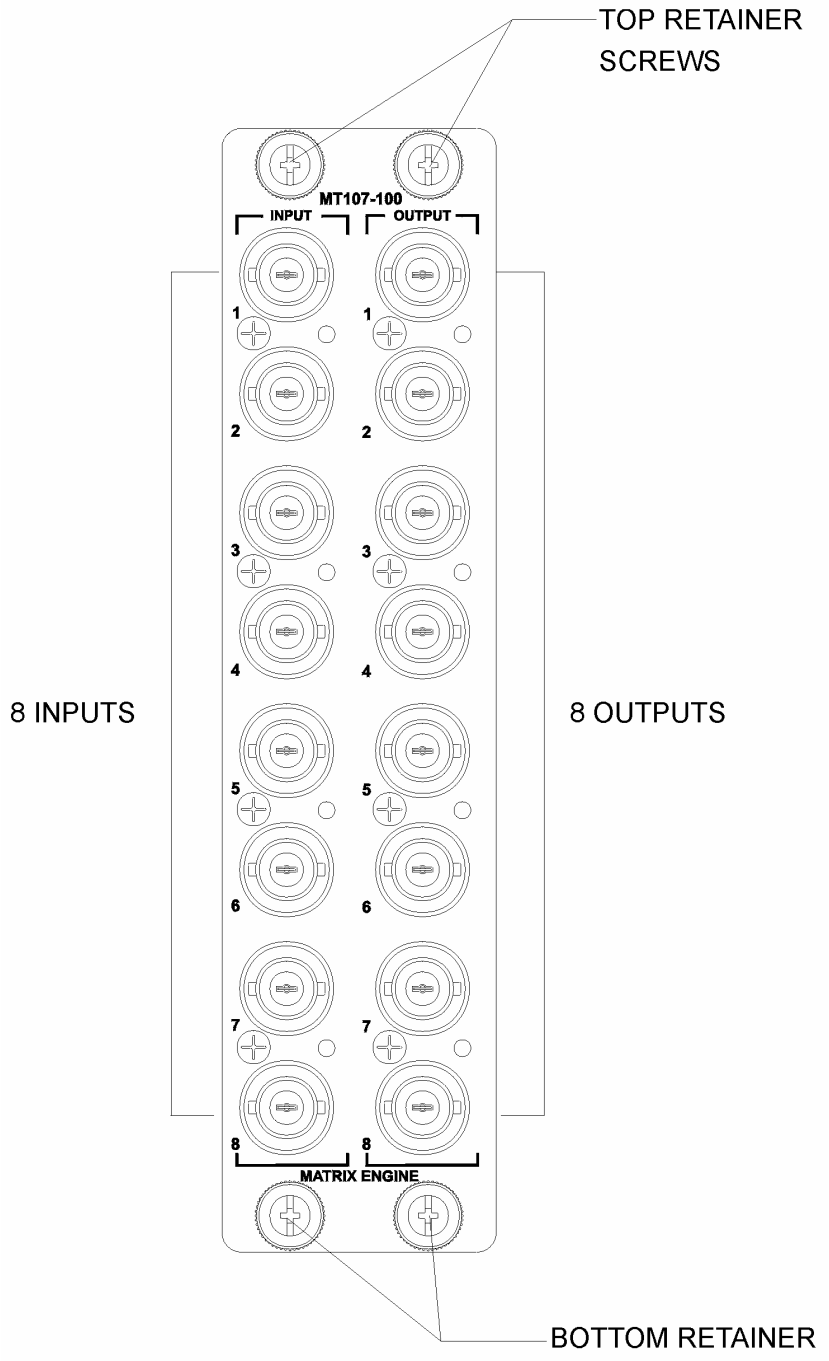
Table 2. **MT107-100** Mechanical

ELECTRICAL	MT107-100
Video Input Signals	R,G,B
Impedance Analog	75 Ohms
Analog Signal Level	1.5V p-p max.
Sync Input Signals	H,V
Impedance	10 kOhm
Signal Level	3 - 5 Volts TTL
Output Video Signals	
Impedance Analog	75 Ohms
Gain	1.05
Bandwidth	270 MHz @ -3dB
Output Sync Signals	
Impedance	75 Ohms
Signal Level	4.5 Volts TTL

Table 3. **MT107-100** Electrical

ALTINEX
SIGNAL MANAGEMENT SOLUTIONS
Tel: 714-990-2300 • Toll-Free: 1-800-ALTINEX • FAX: 714-990-3303 • E-mail: solutions@altinex.com • Web: www.altinex.com

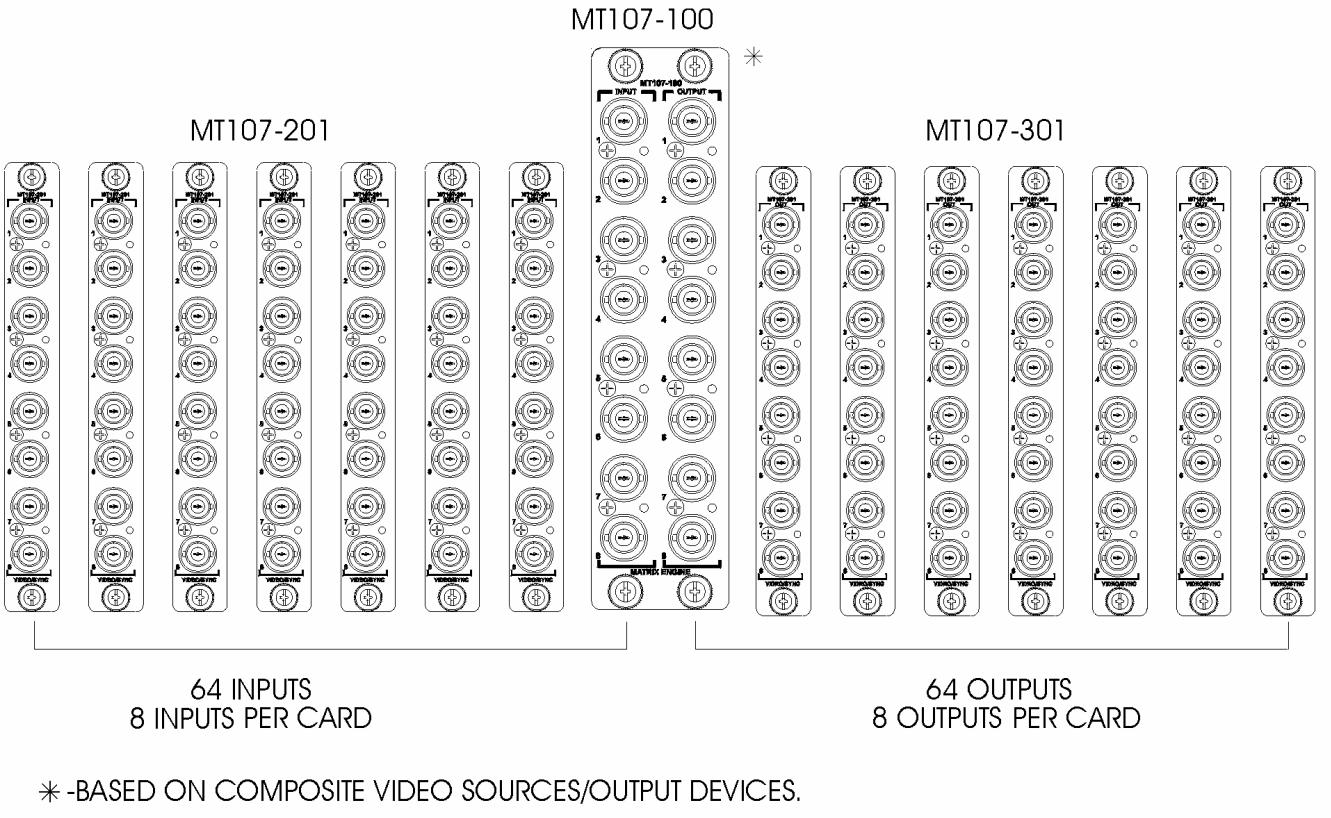
PRODUCT DESCRIPTION 4



ALTINEX
SIGNAL MANAGEMENT SOLUTIONS
Tel: 714-990-2300 • Toll-Free: 1-800-ALTINEX • FAX: 714-990-3303 • E-mail: solutions@altinex.com • Web: www.altinex.com

APPLICATION DIAGRAM 5

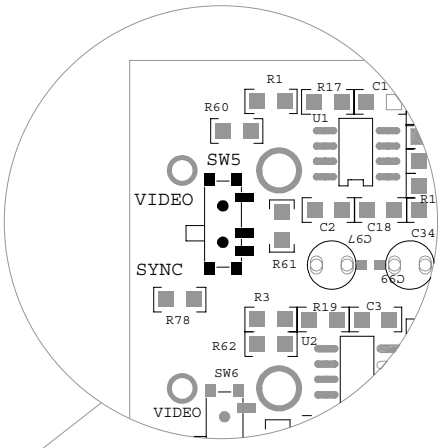
DIAGRAM 1: TYPICAL CONFIGURATION



ALTINEX
SIGNAL MANAGEMENT SOLUTIONS
Tel: 714-990-2300 • Toll-Free: 1-800-ALTINEX • FAX: 714-990-3303 • E-mail: solutions@altinex.com • Web: www.altinex.com

DIAGRAM 2: OUTPUT CARD SWITCHES

VIDEO / SYNC SWITCH SETTINGS



Set the VIDEO/SYNC switch to match the type of output signal being used.

NOTE: There are eight (8) switches, one per output.

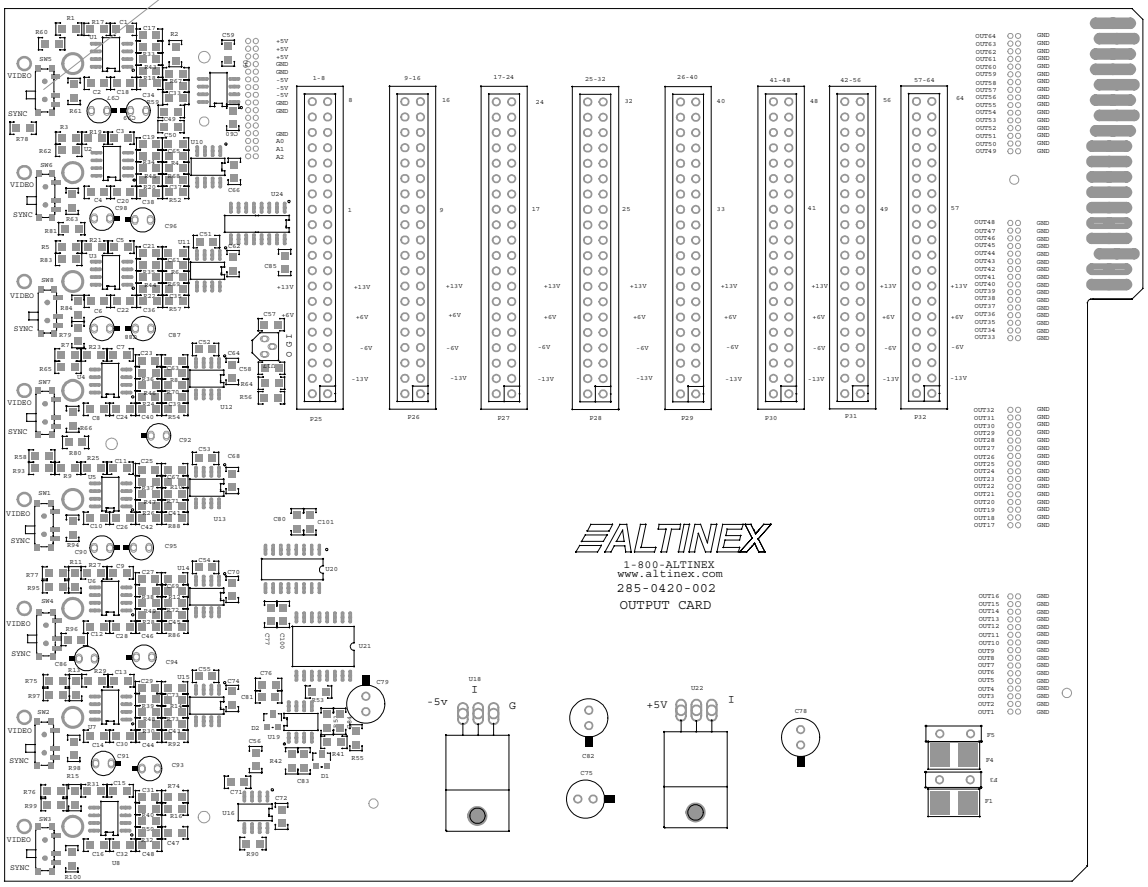
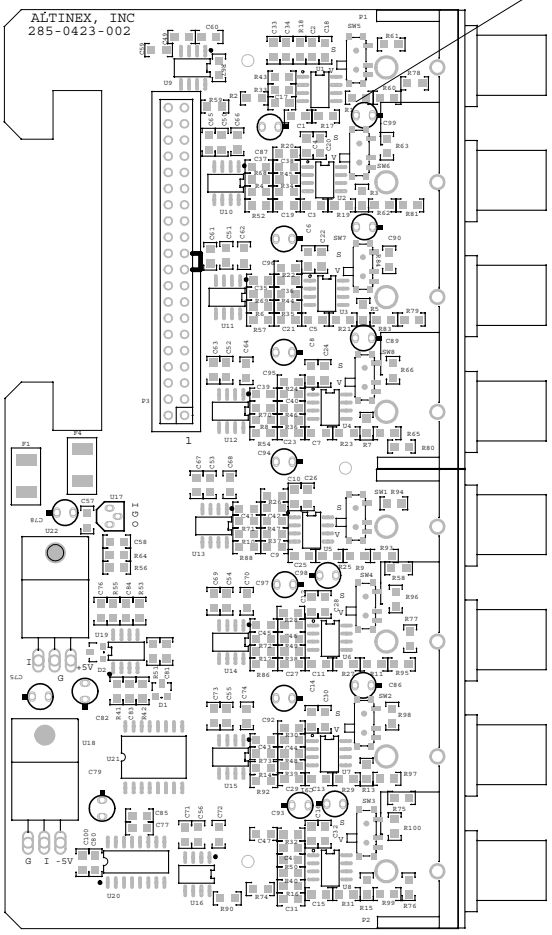


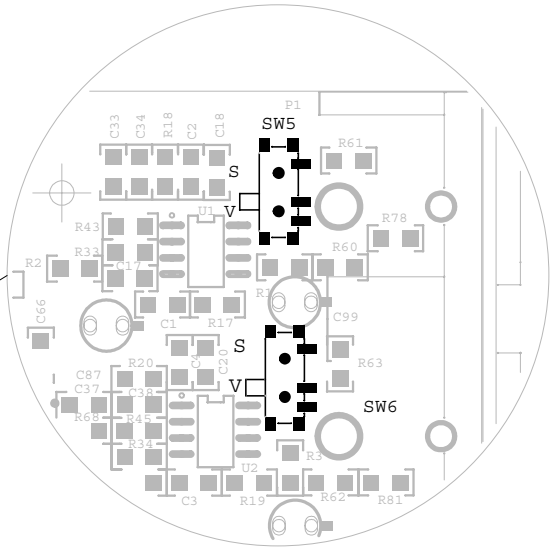
DIAGRAM 3: ADD ON CARD SWITCHES

VIDEO / SYNC SWITCH SETTINGS

Set the V/S (Video/Sync) switch to match the type of output signal being used.

NOTE: There are eight (8) switches, one per each output.



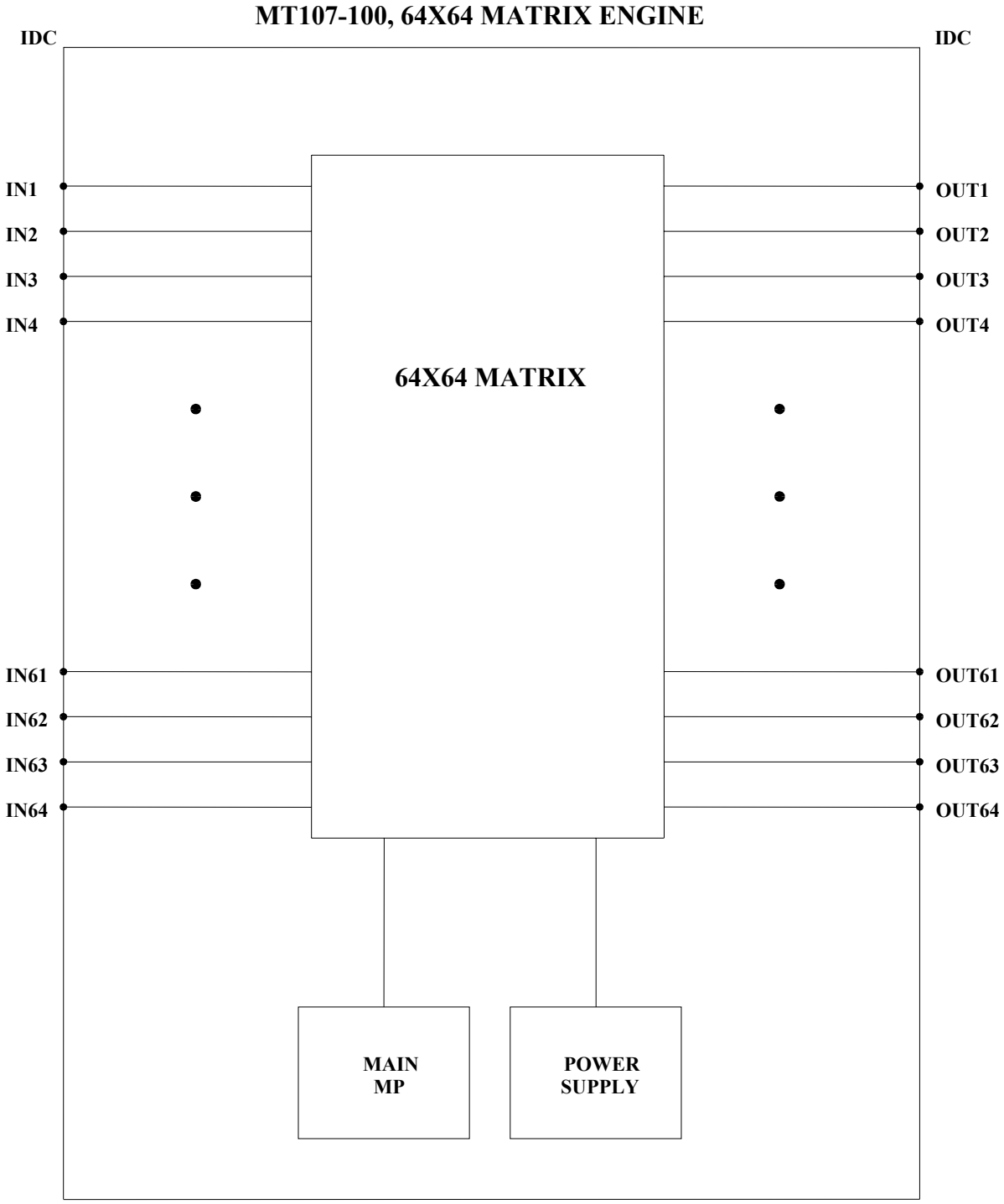


S = SYNC

V = VIDEO

ALTINEX
SIGNAL MANAGEMENT SOLUTIONS
Tel: 714-990-2300 • Toll-Free: 1-800-ALTINEX • FAX: 714-990-3303 • E-mail: solutions@altinex.com • Web: www.altinex.com

DIAGRAM 4: INTERNAL VIEW



ALTINEX
SIGNAL MANAGEMENT SOLUTIONS
Tel: 714-990-2300 • Toll-Free: 1-800-ALTINEX • FAX: 714-990-3303 • E-mail: solutions@altinex.com • Web: www.altinex.com

INSTALLING YOUR MULTI-TASKER™ 6

Step 1. Decide what type of output signal is required for each output. (Video or Sync)

Step 2. Set the jumpers on the output card(s) as necessary. See DIAGRAM 2 and DIAGRAM 3 for switch locations.

Step 3. Determine the number of slots required for the **MT107-100**, including the add-on cards. The base **MT107-100** requires two slots, and a fully loaded 64X64 Matrix engine requires 16 slots.

Step 4. Carefully, slide the **MT107-100** into available slots in the Multi-Tasker™ Enclosure in order to connect to the bus. Make sure that the **MT107-100** cards fits into place.

Step 6. Secure the cards to the Multi-Tasker™ by tightening the retainer screws located on the top and bottom of each card.

Step 7. Connect a cable from the video source to one of the input connectors on the **MT107-100** and one of the output connectors to a display device through a cable.

Step 8. Starting from the left, identify the slot number where the **MT107-100** INPUT CONNECTOR CARD is plugged into the Enclosure (left slot of the Engine). Make note of the slot number. It is required for RS-232 control.

OPERATION 7

7.1 RS-232 CONTROL

When used in the Multi-Tasker™ Enclosure, the **MT107-100** has many advanced remote control capabilities, which are accessible through standard RS-232 communication. The actual controlling can be accomplished through a computer control system or any other device capable of sending RS-232 commands.

7.1.1 RS-232 INTERFACE

The RS-232 commands, for the **MT107-100**, are in a simple ASCII character format.

1. Square brackets "[ ]" are part of the command.

2. Use uppercase letters for all commands.

Commands that end in "S" will be saved into memory. Commands not ending in "S" will still be executed but will not be restored when the system is reset or powered off and then power on.

7.2 DESCRIPTION OF COMMANDS

Each command consists of three parts: Function, Card ID, and Unit ID.

[Function , Card ID , Unit ID]

Example: [VERC3U2]

VER = Function

C3 = Card or Group ID

U2 = Unit ID

For Function, see a detailed explanation under each command description.

The Card ID is an assigned value. It is equal to the enclosure slot number in which the card is installed. The value can range from 1 to 4 up to 1 to 20 depending on the enclosure.

Card ID 0 (C0) is used for the controller. See the **MT100-100** User's Guide for details.

The Group ID is a number representing a group of cards defined with the [WR] command. When using the Group ID, all cards in the group will perform the given instruction.

Changing the position of a card will significantly affect the commands recorded on software definitions or third party control systems.

The Unit ID has a value from 0 to 9. Unit ID 0 should be used for single unit operation. If the Unit ID is set to zero, each command may be used without Ui. Use the command [SETU0], as explained in the MT100-100 User's Guide.

Example:

[VERC3]: For Unit ID Zero

[VERC3Ui]: For Unit ID other than Zero

ALTINEX
SIGNAL MANAGEMENT SOLUTIONS
Tel: 714-990-2300 • Toll-Free: 1-800-ALTINEX • FAX: 714-990-3303 • E-mail: solutions@altinex.com • Web: www.altinex.com

[VERC3]: Equivalent to [VERC3U0]

1. **[VER]**

   This command displays the firmware version and card type for the **MT107-100** card.

   Command Format: [VERCnUi]

   Cn = Engine Card Slot Number

   Ui = Unit ID (i = # from 0 to 9)

   Example:

   There is an MT107-100 card is in slot #2. Send the command [VERC2] and the Multi-Tasker™ Enclosure will return feedback as:

   MT107-100 690-0159-003

   MT107-100 = the card model

   690-0159-003 = the software version

2. **[C]**

   This command displays the active matrix configuration settings.

   Command Format: [CnUi]

   Cn = Engine Card Slot Number

   Ui = unit ID (i = # from 0 to 9)

   Example:

   An **MT107-100** in slot #7. When sending the command [C7], feedback will be returned as:

   Matrix number:1
   Matrix size:64X64
   Input offset:00
   Output offset:00
   Channel width:01
   Channel space:00
   Ch1 In1 Out1 ON AudioL32
   Ch1 In2 Out2 ON AudioL32
   …
   Ch1 In63 Out63 ON AudioL32
   Ch1 In64 Out64 ON AudioL32

   Description of Feedback:

   The first line lists the matrix number, 1 to 9. The next five lines describe the properties of the matrix. The remaining lines are channel specific. Matrix 1 is the active matrix. Matrix 1 is a 64X64 matrix with no input offset and no output offset. The channel width is one and the channel spacing is zero. All 64 channels are ON, the input audio level is set to the maximum of 32 and each input is connected to its corresponding output.

3. **[MAT]**

   This command sets the matrix configuration for the matrix engine.

   Command Format:

   [MATj,mm,ww,xx,yy,kk,ll,CnUiS]

   j = Matrix ID (j = # from 1 to 9)

   The following properties MUST be entered in two (2) digit format.

   mm = Inputs (2 digit # from 01-64)
   zz = Outputs (2 digit # from 01-64)
   xx = Input Offset (2 digit # from 00-99)
   yy = Output Offset (2 digit # from 00-99
   kk = Channel Width (2 digit # from 01-32)
   ll = Channel Spacing (2 digit # from 00-31)
   Cn = Engine Card Slot Number
   (The slot number of the LEFT card of the engine is the Engine Card Slot number.)
   Ui = Unit ID (i = # from 0 to 9)
   S = Save
   This property saves the configuration to Matrix ID memory and will allow the configuration to be recalled any time, even after power up or reset.

   Adding the 'S' to the command will also make the matrix configuration the default at power up. The last configuration ID created and saved will be the default at power up.

   In order to change the power up default without having to redefine the settings, see the command [M*j*C*n*S].

   Matrix Configuration Definitions:

   1. Matrix ID: A total of 9 matrix configurations may be defined in a single engine. Once saved, the configuration may be recalled by number without having to redefine the settings.

2. Number of Inputs: The number of inputs in the configuration, or eight times the number of input cards installed is the maximum.

   If the channel width and spacing are different, then the number of inputs will be lower. For example, in a 32X32 matrix with a width of 4 and a spacing of 7, the number of inputs would be 8. See Example 1 in this section for specifics.
3. Number of Outputs: *Same as for Inputs.*
4. Input Offset: The offset defines where Input #1 will be in reference to Input #1 on the Input Connector Card. Typically, Input #1 would be Input #1 of the base card. However, an offset of 8 will make Input #1 start at the actual Input #9.
5. Output Offset: *Same as for Input Offset.*
6. Channel Width: The number of signals per channel. The default width is one.
7. Channel Spacing: The default spacing is zero. When dealing with multi-cabled signals, the spacing is typically one less than the number of inputs on a single card.

Matrix Assembly Layout:

Input cards count from the main Input Connector Card, RIGHT to LEFT.

Output cards count from the main Output Connector Card, LEFT to RIGHT.

The following table illustrates the card and channel numbering. The channel numbering is based upon the default configuration. The default configuration is configured as a 64X64 Matrix with the following settings:

Number of Inputs = 64

Number of Outputs = 64

Input Offset = 00

Output Offset = 00

Channel Width = 01

Channel Spacing = 00

Default Configuration

INPUT CARDS					OUTPUT CARDS				
8	**…**	**3**	**2**	**1**	**1**	**2**	**3**	**…**	**8**
Add On		Add On	Add On	Base Unit	Base Unit	Add On	Add On		Add On
57		17	9	1	1	9	17		57
58		18	10	2	2	10	18		58
59	←	19	11	3	3	11	19	→	59
60		20	12	4	4	12	20		60
61		21	13	5	5	13	21		61
62		22	14	6	6	14	22		62
63		23	15	7	7	15	23		63
64		24	16	8	8	16	24		64

Example 1:

Inputs = 08

Outputs = 08

Input Offset = 00

Output Offset = 00

Width = 04

Spacing = 07

In the charts below, the cards are in groups of four to help illustrate the CHANNEL WIDTH definition.

In this configuration, if Input 1 is connected to Output 8, the entire channel, 1a, 1b, 1c and 1d, will be switched to outputs 8a, 8b, 8c and 8d respectively.

Input Cards

4	3	2	1
1d	1c	1b	1a
2d	2c	2b	2a
3d	3c	3b	3a
4d	4c	4b	4a
5d	5c	5b	5a
6d	6c	6b	6a
7d	7c	7b	7a
8d	8c	8b	8a

Output Cards

1	2	3	4
1a	1b	1c	1d
2a	2b	2c	2d
3a	3b	3c	3d
4a	4b	4c	4d
5a	5b	5c	5d
6a	6b	6c	6d
7a	7b	7c	7d
8a	8b	8c	8d

ALTINEX SIGNAL MANAGEMENT SOLUTIONS
Tel: 714-990-2300 • Toll-Free: 1-800-ALTINEX • FAX: 714-990-3303 • E-mail: solutions@altinex.com • Web: www.altinex.com

Example 2:

Inputs = 16
Outputs = 16
Input Offset = 00
Output Offset = 00
Width = 02
Spacing = 00

In this configuration, if Input 1 is connected to Output 16, the entire channel, 1a and 1b, will be switched to outputs 16a and 16b respectively.

Input Cards

4	3	2	1
13a	9a	5a	1a
13b	9b	5b	1b
14a	10a	6a	2a
14b	10b	6b	2b
15a	11a	7a	3a
15b	11b	7b	3b
16a	12a	8a	4a
16b	12b	8b	4b

Output Cards

1	2	3	4
1a	5a	9a	13a
1b	5b	9b	13b
2a	6a	10a	14a
2b	6b	10b	14b
3a	7a	11a	15a
3b	7b	11b	15b
4a	8a	12a	16a
4b	8b	12b	16b

4. **[M*j*C*n*]**

   This command selects the matrix to be active.

   Command Format: [MjCnUi]

   j = Matrix ID (j = # from 1 to 9)

   Cn = Engine Card Slot Number

   Ui = Unit ID (i = # from 0 to 9)

   Example:

   There is a matrix engine in slot 6. Send the command [M1C6] to recall matrix configuration #1 of card 6.

5. **[M*j*C*n*S]**

   This command will save the defined matrix number as the default, which would be recalled on power up or reset. The matrix settings MUST first be saved when the matrix is defined using the [MAT…S] command

   Command Format: [MjCnUiS]

   j = Matrix ID (j = # from 1 to 9)

   Cn = Engine Card Slot Number

   Ui = Unit ID (i = # from 0 to 9)

   S = Save

   Example:

   In order to make configuration #1 of card 6 the default configuration when power is turned on, send the command [M1C6S].

6. **[ON]**

   This command turns ON a single output, or all the outputs, for the current matrix.

   Command Format: [ONzzCnUi]

   zz = Output Number (zz = # from 01 to 64)

   Cn = Engine Card Slot Number

   Ui = Unit ID (i = # from 0 to 9)

   Example 1: SINGLE OUTPUT

   There is an **MT107-100** in slot #10. Turn ON output number 64 by sending the command [ON64C10].

   Example 2: ALL OUTPUTS

   There is an MT107-100 in slot #10. Turn ON ALL outputs by sending the command [ONC10].

7. **[OFF]**

   This command turns OFF a single output, or all outputs, for the current matrix.

   Command Format: [OFFzzCnUi]

   zz = Output Number (zz = # from 01 to 64)

   Cn = Engine Card Slot Number

   Ui = Unit ID (i = # from 0 to 9)

   Example 1: SINGLE OUTPUT

   There is an **MT107-100** in slot #10. Turn OFF only output number 01 by sending the command [OFF01C10].

   Example 2: ALL OUTPUTS

   There is an **MT107-100** in slot #10. Turn OFF ALL outputs by sending the command [OFFC10].

8. **[IO]**

This command connects an input to an output for the current matrix configuration.

Command Format: [ImmOzzCnUi]

mm = Input (2 digit # from 01 to 64)

zz = Output (2 digit # from 01 to 64)

Cn = Engine Card Slot Number

Ui = Unit ID (i = # from 0 to 9)

Example:

Connect Input 22 to Output 32 of the engine in slot #10. Send the command [I22O32C10] and Input 22 will be connected to Output 32.

9. **[IO*]**

This command connects a single input to all the outputs for the current matrix configuration.

Command Format: [ImmO*CnUi]

mm = Input (2 digit # from 01 to 64)

Cn = Engine Card Slot Number

Ui = Unit ID (i = # from 0 to 9)

Example:

Connect Input 07 of the engine in slot #8 to all the outputs for that engine in its current matrix configuration. To do this, send the command [I07O*C8].

10. **[IN#S]**

This command returns a list of outputs that are connected to a specified input.

Command Format: [INmSCnUi]

mm = Input (2 digit # from 01 to 64)

Cn = Engine Card Slot Number

Ui = Unit ID (i = # from 0 to 9)

Example:

A matrix engine is in slot #10 and input 22 is connected to outputs 1, 32 and 64. Send the command [IN22SC10] and receive the following feedback:

[1,32,64]

11. **[OUT#S]**

This command returns the input that is connected to the specified output.

Command Format: [OUTmSCnUi]

mm = Output (2 digit # from 01 to 64)

Cn = Engine Card Slot Number

Ui = Unit ID (i = # from 0 to 9)

Example:

A matrix engine is in slot #9 and input 8 is connected to output 24. Send the command [OUT24SC9] and receive the following feedback:

8

12. **[MODE]**

This command sets the matrix switch mode to Blocking or Non-Blocking.

Command Format: [MODEmCnUi]

m = 1 = ON, 0 = OFF

Cn = Engine Card Slot Number

Ui = Unit ID (i = # from 0 to 9)

Example: NON-BLOCKING

Send the command [MODE0C9] to turn OFF matrix switch blocking for the engine in slot #9. Next, send the command [I1O*C9] to connect input 1 to all outputs. In Non-Blocking mode, the inputs will be switched and the outputs will be enabled.

Example: BLOCKING ON

Send the command [I1O*C9] to connect input 1 to all outputs. With Blocking ON, input 1 will be connected to all outputs, but only output 1 will be enabled. The remaining outputs will need to be enabled using the [ON] command.

Connecting a single output will result in the output being switched and enabled. For example, with Blocking ON, sending the command [I22O22C9] will result in Input 22 being connected to Output 22 and Output 22 will be enabled.

13. **[…S]** – Save

This command will save the configuration command being sent in memory. When sending the command [I1O8C4S], after reset or power up, Input 1 will be connected to Output 8 of the Engine Card Slot #4.

14. **[…P]** – Path

This command will set the path for the output, but it is not active until the switch command, [SW], is executed. Commands ending in "P" are not executed immediately. The path for outputs on multiple cards or the same card can be preset

Example 1:

There is a Matrix Engine slot #9. To enable outputs 1 and 2 simultaneously, use the following commands:

[ON1C9P]
[ON2C9P]
[SW]

Example 2:

There is a Matrix Engine in slot#9 and one regular video switcher in slot #1. Connect Input 1 of the Engine Card in slot #9 to Output 64 while simultaneously disabling the outputs for the card in slot #1. In order to accomplish this, send the following commands:

[IN1O64C9 P]
[OFFC1P]
[SW]

15. **[SW]** – Switch

The switch command immediately connects inputs and outputs, which were previously set with the PATH command on this card or any other cards in the **MT100-100**. See the PATH command for examples.

16. **[SEL]** with **[+]** and **[–]**

This command is the volume select command. It sets the path to adjust the input volume level of the current matrix and is used in conjunction with the [+] and [–] commands.

Command Format: [SELmmCnUi]

mm = Input (2 digit # from 01 to 64)
Cn = Engine Card Slot Number
Ui = Unit ID (i = # from 0 to 9)
[+] = Increment level by one
[–] = Decrement level by one

Example:

The Engine Card is in slot #8. Adjust the volume on Input 2. The current volume level is set to 10. After sending the following commands, a better volume level of 15 is obtained:

1. [SEL02C8]
   The current volume level is 10.
2. [**–**] [**–**] [**–**]
   The level is now 7 and is too quiet.
3. [**+**] [**+**] [**+**] [**+**] [**+**] [**+**] [**+**] [**+**]
   The level is now 15 and no further adjustments are required.

17. **[VOL]**

This command sets the absolute volume level for a given input.

Command Format: [VOLmmAvCnUi]

mm = Input (2 digit # from 01 to 64)

Av = Volume Level (# from 01 to 32)

Cn = Engine Card Slot Number

Ui = Unit ID (i = # from 0 to 9)

Example:

Set the volume level for Input 20, of the Engine Card in slot #8, to a level of 16 using the command [VOL20A16C8].

18. **[SDI]**

This command is used to detect if there is a signal present on one input or all inputs. The system will return feedback along the following:

In1 Signal ON = YES a signal is present.
or
In1 Signal OFF = NO, there is no signal.

<u>SINGLE INPUT</u>

Command Format: [SDImmCnUi]

mm = Input (2 digit # from 01 to 64)
Cn = Engine Card Slot Number
Ui = Unit ID (i = # from 0 to 9)

Example: CHECK ONE INPUT

Check for a signal on Input 1 of the Engine in slot #8 by sending the command [SDI01C8]. If there is a signal present on Input 1, the system will return the following feedback:

In1 Signal ON

ALL INPUTS

Command Format: [SDICnUi]

Cn = Engine Card Slot Number
Ui = Unit ID (i = # from 0 to 9)

Example: CHECK ALL INPUTS

Check for a signal on all inputs of the Engine in slot #8 by sending the command [SDIC8]. In this case, there is a signal on Input 1, but the rest have no signals. The system will return the following feedback:

In1 Signal ON
In2 Signal OFF
In3 Signal OFF
In4 Signal OFF
…
In63 Signal OFF
In64 Signal OFF

19. **[SDO]**

This command is used to detect if there is a signal present on one output or all outputs. The system will return feedback along the following:

Out1 Signal ON = YES a signal is present.
or
Out1 Signal OFF = NO, there is no signal.

SINGLE OUTPUT

Command Format: [SDOmmCnUi]

mm = Output (2 digit # from 01 to 64)

Cn = Engine Card Slot Number

Ui = Unit ID (i = # from 0 to 9)

Example: CHECK ONE OUTPUT

Check for a signal on Output 1 of the Engine in slot #8 by sending the command [SDO01C8]. If a signal present on Output 1, the following feedback will be returned:

Out1 Signal ON

ALL OUTPUTS

Command Format: [SDOCnUi]

Cn = Engine Card Slot Number

Ui = Unit ID (i = # from 0 to 9)

Example: CHECK ALL OUTPUTS

Check for a signal on all outputs of the Engine in slot #8 by sending the command [SDOC8]. In this case, there is a signal present on Output 1, but the rest have no signals. The system will return the following feedback:

Out1 Signal ON
Out2 Signal OFF
Out3 Signal OFF
Out4 Signal OFF
…
Out63 Signal OFF
Out64 Signal OFF

20. **[VIS]**

This command activates and deactivates the VIS feature.

If the VIS feature is active, and no switching pulse is present within 20mS, switching will be performed on a regular basis.

Command Format: [VIS=pCnUi]

p = Variable for activation/deactivation of VIS

0 = VIS is turned OFF
1 = VIS is turned ON

Cn = Engine Card Slot Number

Ui = Unit ID (i = # from 0 to 9)

Example:

Turn OFF the VIS for the Engine Card in slot #8. Send the command [VIS=0C8]. Then check the status of the VIS circuit with the next command [TVIS].

Tel: 714-990-2300 • Toll-Free: 1-800-ALTINEX • FAX: 714-990-3303 • E-mail: solutions@altinex.com • Web: www.altinex.com

21. **[TVIS]**

This command is used to test if the VIS circuit is ON or OFF.

Command Format: [TVISCnUi]

Cn = Engine Card Slot Number

Ui = Unit ID (i = # from 0 to 9)

Example:

Test the VIS circuit for the Engine Card in slot #8. Send the command [TVISC8] and the system will return the following feedback:

VIS circuit ON

22. **[CLR]**

This command resets the **MT107-100** to the manufacturer's settings. The matrix configuration is set to Matrix 1, but the matrix definitions are not cleared using this command.

Command Format: [CLRCnUi]

Cn = Engine Card Slot Number
Ui = Unit ID (i = # from 0 to 9)

Example:

Clear the MT107-100 with Engine Card in slot #12. To do this, send the command [CLRC12]. The system will return the following feedback immediately:

PLEASE WAIT
CARD IS PERFORMING FACTORY RESET
IT WILL TAKE COUPLE OF MINUTES
Upon completion, the following will be displayed.

FACTORY RESET COMPLETED

23. **[TEST]**

This command performs a series of internal tests on the matrix engine memory.

Upon completion, the system will display the results. This feedback will be similar to the following example:

MEMORY IC TEST RESULTS:
MEMORY IC PASS

24. **[HELP]**

This command displays information available for the Multi-Tasker interface commands.

Command Format: [HELPCnUi]

Cn = Engine Card Slot Number

Ui = Unit ID (i = # from 0 to 9)

Example:

In order to display the RS-232 commands available for the **MT107-100** card in slot 2, send the command [HELPC2]. The commands along with a brief description will be displayed in the Terminal Window.

25. **[WR]**

This command groups multiple cards in the Enclosure. Each unit contains a maximum of eight groups.

In Multi-Tasker™ systems with audio and video cards, boards are typically grouped as follows:

Group 1 = Video Cards
Group 2 = Audio Cards
Group 3 = Video and Audio Cards

If assigning group commands to button functions, it is best to use the "Press and Hold on Power Up" to make group settings.

Command Format: [WRCn…GkUi]

Cn = Card ID (n = slot # from 1 to max slots)
Gk = Group number (k = # from 1-8)
Ui = Unit ID (i = # from 0-9)

Example:

To group cards 1, 2, and 3 as group 5 of Unit ID 1, send the command [WRC1C2C3G5U1]. After executing this command, cards 1, 2 and 3 will be grouped together as group 5 of Unit ID 1.

Tel: 714-990-2300 • Toll-Free: 1-800-ALTINEX • FAX: 714-990-3303 • E-mail: solutions@altinex.com • Web: www.altinex.com

26. **[CLR]**

This command clears the members for a single group or for all eight groups. The clear command restores the cards to default settings.

Command Format: [CLRGkUi]

Gk = Group number (k = # from 1-8)
Ui = Unit ID (i = # from 0-9)

Example:

1) To clear group 1, send the [CLRG1U1] command. This command clears the members for the specified group only.
2) To clear all groups of Unit ID 1, send the [CLRG✻U1] command.

27. **[RD]**

This command displays the members in each group.

Command Format: [RDGkUi]

Gk = Group number (k = # from 1-8)
Ui = Unit ID (i = # from 0-9)

Example:

The cards in slots 1, 2 and 19 are part of group 5 in Unit ID 1. Read the member data for group 5 of Unit ID 1, by sending the command [RDG5U1]. The system will return feedback as follows:

C1C2C19 G5U1

C1 = Card in Slot 1
C2 = Card in Slot 2
C19 = Card in slot 19
G5 = Group 5
U1 = Unit ID 1

28. **[CLM]**

This command removes the members in a group and leaves the group empty.

Command Format: [CLMGkUi]

Gk = Group number (k = # from 1-8)
Ui = Unit ID (i = # from 0-9)

Example:

Group 5 of Unit ID 1 contains the cards in slots 1, 2 and 19. Read the member data for group 5 of Unit ID 1. Send the command [RDG5U1] and receive the following feedback:

C1C2C19 G5U1

Now, clear group 5 by sending the command [CLMG5U1]. Reread the member data as above and note the following feedback:

NONE G5U1

7.3 SUMMARY OF COMMANDS

1) [VER] Receives software version
2) [C] Receives status of the card
3) [MAT] Matrix Configuration
4) [MC] Select matrix to be active
5) [MCS] Save matrix configuration
6) [ON] Turns on one or more outputs for a single card or a group of cards
7) [OFF] Turns off one or more outputs for a single card or a group of cards
8) [IO] Connect one input to one output
9) [IO✻] Connect one input to all outputs
10) [IN#S] Receive status of one input
11) [OUT#S] Receive status of one output
12) [MODE] Turn Blocking On/Off
13) […S] Save the command configuration sent
14) […P] Sets the path, preload for [SW]
15) [SW] Switch (outputs the preloaded buffer)
16) [SEL] Select input to adjust volume
17) [VOL] Set the desired absolute volume
18) [SDI] Input Signal Present
19) [SDO] Output Signal Present
20) [VIS] Activate/deactivate VIS feature

ALTINEX
SIGNAL MANAGEMENT SOLUTIONS
Tel: 714-990-2300 • Toll-Free: 1-800-ALTINEX • FAX: 714-990-3303 • E-mail: solutions@altinex.com • Web: www.altinex.com

21) [TVIS] Test the VIS circuit

22) [CLR] Reset to manufacturer settings

23) [TEST] Perform internal tests

24) [HELP] Display all available commands

Group Commands

25) [WR] Groups multiple cards

26) [CLR] Clears members of a single group or all groups

27) [RD] Displays group members

28) [CLM] Removes members from group.

TROUBLESHOOTING GUIDE 8

We have carefully tested and have found no problems in the supplied **MT107-100.** However, we would like to offer suggestions for the following:

8.1 LED IS NOT LIT

Cause 1: Card cage is not plugged in.

Solution: Plug card cage in. If the LED lights, the problem is solved. If the LED is still not ON, see Cause 2.

Cause 2: Card is not plugged in all the way.

Solution: Push the card in all the way. If the LED is still not ON, see Cause 3.

Cause 3: Card cage slot has a problem.

Solution 1: Test the card in other slots of the card cage. If the slot was damaged, the card may work in other slots. If other slots work and the LED lights, the problem is the card cage slot. The card cage may require service. Call ALTINEX at (714) 990-2300. If the other slots do not work and the LED is still not lit, see Solution 2.

Solution 2: Take any other known good card with an LED and verify that the slot used is good by seeing if the other card's LED lights in that slot. If it lights, then the original card may be the source of the problem. Call ALTINEX at (714) 990-2300.

8.2 LED IS BLINKING RED

Cause 1: The CPU on the card is not working properly.

Solution 1: Look at the card and verify that there is no damage. If there is no damage, see Solution 2.

Solution 2: Verify that all IC's are seated in their sockets. If the LED is still blinking red, see Cause 2.

Cause 2: The card and its serial device are not communicating.

Solution 1: Turn the system OFF and then ON again. If there is still an error, see Cause 3.

Cause 3: RS485 communication error

Solution 1: Make sure that the card is pushed all the way into the slot. If there is still an error, see Solution 2.

Solution 2: Turn the system OFF and then ON again. If there is still an error, see Solution 3.

Solution 3: Call ALTINEX at (714) 990-2300.

8.3 NO DISPLAY

Cause 1: The source has a problem.

Solution: Check the source and make sure that there is a signal present and all source connections are correct. If the source is working and there is still no display, see Cause 2.

Cause 2: The card output is not selected.

Solution: Select the card output. See RS-232 accessible commands in Section 7. If no display is present, see Cause 3.

Cause 3: Cable connections are incorrect.

Solution: Make sure that cables are properly connected. Also, make sure that the continuity and wiring are good. If there is still no display present, see Cause 4.

Cause 4: The display has a problem.

Solution: Make sure the display has power and is turned ON. If there is still no display, please call Altinex at (714) 990-2300.

ALTINEX POLICY 9

9.1 LIMITED WARRANTY/RETURN POLICY

Please see the Altinex website at www.altinex.com for details on warranty and return policy.

9.2 CONTACT INFORMATION

ALTINEX, INC

592 Apollo street

Brea, CA 92821 USA

TEL: 714-990-2300

TOLL FREE: 1-800-ALTINEX

WEB: www.altinex.com

E-MAIL: solutions@altinex.com